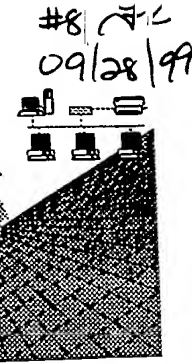


Lundgren

RAW SEQUENCE LISTING ERROR REPORT

BIOTECHNOLOGY
SYSTEMS
BRANCH



The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following CRF diskette:

Application Serial Number:

09/301,704A

Art Unit / Team No. :

1653

Date Processed by STIC:

8/26/99

THE ATTACHED PRINTOUT EXPLAINS THE **ERRORS DETECTED.**

PLEASE BE SURE TO FORWARD THIS INFORMATION TO THE APPLICANTS BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANTS ALONG WITH A NOTICE TO COMPLY or,
- 2) CALLING APPLICANTS AND FAXING THEM A COPY OF THE PRINTOUT WITH A NOTICE TO COMPLY

THIS WILL INSURE THAT THE NEXT SUBMISSION RECEIVED FROM THEM WILL BE ERROR FREE.

IF YOU HAVE ANY FURTHER QUESTIONS, PLEASE CALL:

MARK SPENCER 703-308-4212

Raw Sequence Listing Error Summary

ERROR DETECTED SUGGESTED CORRECTION

SERIAL NUMBER:

09/30/704A

ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE

- 1 ☐ Wrapped Nucleics The number/text at the end of each line "wrapped" down to the next line.
This may occur if your file was retrieved in a word processor after creating it.
Please adjust your right margin to .3, as this will prevent "wrapping".
- 2 ☐ Wrapped Aminos The amino acid number/text at the end of each line "wrapped" down to the next line.
This may occur if your file was retrieved in a word processor after creating it.
Please adjust your right margin to .3, as this will prevent "wrapping".
- 3 ☐ Incorrect Line Length The rules require that a line not exceed 72 characters in length. This includes spaces.
- 4 ☐ Misaligned Amino Acid Numbering The numbering under each 5th amino acid is misaligned. This may be caused by the use of tabs between the numbering. It is recommended to delete any tabs and use spacing between the numbers.
- 5 ☐ Non-ASCII This file was not saved in ASCII (DOS) text, as required by the Sequence Rules.
Please ensure your subsequent submission is saved in ASCII text so that it can be processed.
- 6 ☐ Variable Length Sequence(s) ☐ contain n's or Xaa's which represented more than one residue.
As per the rules, each n or Xaa can only represent a single residue.
Please present the maximum number of each residue having variable length and indicate in the (ix) feature section that some may be missing.
- 7 ☐ PatentIn ver. 2.0 "bug" A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequence(s) ☐. Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence.
- 8 ☐ Skipped Sequences (OLD RULES) Sequence(s) ☐ missing. If intentional, please use the following format for each skipped sequence:
(2) INFORMATION FOR SEQ ID NO:X:
(I) SEQUENCE CHARACTERISTICS:(Do not insert any headings under "SEQUENCE CHARACTERISTICS")
(xi) SEQUENCE DESCRIPTION:SEQ ID NO:X:
This sequence is intentionally skipped

Please also adjust the "(iii) NUMBER OF SEQUENCES:" response to include the skipped sequence(s).
- 9 ☐ Skipped Sequences (NEW RULES) Sequence(s) ☐ missing. If intentional, please use the following format for each skipped sequence.
<210> sequence id number
<400> sequence id number
000
- 10 ☒ Use of n's or Xaa's (NEW RULES) Use of n's and/or Xaa's have been detected in the Sequence Listing.
Use of <220> to <223> is MANDATORY if n's or Xaa's are present.
In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.
- 11 ☐ Use of <213>Organism (NEW RULES) Sequence(s) ☐ are missing this mandatory field or its response.
- 12 ☒ Use of <220>Feature (NEW RULES) Sequence(s) 2-7 are missing the <220>Feature and associated headings.
Use of <220> to <223> is MANDATORY if <213>ORGANISM is "Artificial" or "Unknown"
Please explain source of genetic material in <220> to <223> section.
(See "Federal Register," 6/01/98, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of new Rules)
- 13 ☐ PatentIn ver. 2.0 "bug" Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing).
Instead, please use "File Manager" or any other means to copy file to floppy disk.

hundred

1653

PAGE: 1

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/301,704A

DATE: 08/26/1999
TIME: 11:01:29

Input Set: I301704A.RAW

This Raw Listing contains the General Information
Section and up to first 5 pages.

MS-2-3

Does Not Comply
Corrected Diskette Needed

1 <110> APPLICANT: Schembri, Mark Andrew
2 Klemm, Per
3 <120> TITLE OF INVENTION: Novel multifunctional adhesin proteins
4 and their display in microbial cells
5 <130> FILE REFERENCE: 21352 PC 1
6 <140> CURRENT APPLICATION NUMBER: US/09/301,704A
7 <141> CURRENT FILING DATE: 1999-04-29
8 <150> EARLIER APPLICATION NUMBER: PA 1998 00598
9 <151> EARLIER FILING DATE: 1998-04-30
10 <160> NUMBER OF SEQ ID NOS: 46
11 <170> SOFTWARE: FastSEQ for Windows Version 3.0
12 <210> SEQ ID NO 1
13 <211> LENGTH: 300
14 <212> TYPE: PRT
15 <213> ORGANISM: E. coli PC31 FimH
16 <400> SEQUENCE: 1
17 Met Lys Arg Val Ile Thr Leu Phe Ala Val Leu Leu Met Gly Trp Ser
18 1 5 10 15
19 Val Asn Ala Trp Ser Phe Ala Cys Lys Thr Ala Asn Gly Thr Ala Ile
20 20 25 30
21 Pro Ile Gly Gly Gly Ser Ala Asn Val Tyr Val Asn Leu Ala Pro Val
22 35 40 45
23 Val Asn Val Gly Gln Asn Leu Val Val Asp Leu Ser Thr Gln Ile Phe
24 50 55 60
25 Cys His Asn Asp Tyr Pro Glu Thr Ile Thr Asp Tyr Val Thr Leu Gln
26 65 70 75 80
27 Arg Gly Ser Ala Tyr Gly Gly Val Leu Ser Asn Phe Ser Gly Thr Val
28 85 90 95
29 Lys Tyr Ser Gly Ser Ser Tyr Pro Phe Pro Thr Thr Ser Glu Thr Pro
30 100 105 110
31 Arg Val Val Tyr Asn Ser Arg Thr Asp Lys Pro Trp Pro Val Ala Leu
32 115 120 125
33 Tyr Leu Thr Pro Val Ser Ser Ala Gly Gly Val Ala Ile Lys Ala Gly
34 130 135 140
35 Ser Leu Ile Ala Val Leu Ile Leu Arg Gln Thr Asn Asn Tyr Asn Ser
36 145 150 155 160
37 Asp Asp Phe Gln Phe Val Trp Asn Ile Tyr Ala Asn Asn Asp Val Val
38 165 170 175
39 Val Pro Thr Gly Gly Cys Asp Val Ser Ala Arg Asp Val Thr Val Thr
40 180 185 190
41 Leu Pro Asp Tyr Pro Gly Ser Val Pro Ile Pro Leu Thr Val Tyr Cys
42 195 200 205
43 Ala Lys Ser Gln Asn Leu Gly Tyr Tyr Leu Ser Gly Thr His Ala Asp
44 210 215 220

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RAW SEQUENCE LISTING
PATENT APPLICATION US/09/301,704A

DATE: 08/26/1999
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Input Set: I301704A.RAW

45 Ala Gly Asn Ser Ile Phe Thr Asn Thr Ala Ser Phe Ser Pro Ala Gln
225 230 235 240
46 Gly Val Gly Val Gln Leu Thr Arg Asn Gly Thr Ile Ile Pro Ala Asn
47 245 250 255
48 Asn Thr Val Ser Leu Gly Ala Val Gly Thr Ser Ala Val Ser Leu Gly
49 260 265 270
50 Leu Thr Ala Asn Tyr Ala Arg Thr Gly Gly Gln Val Thr Ala Gly Asn
51 275 280 285
52 Val Gln Ser Ile Ile Gly Val Thr Phe Val Tyr Gln
53 290 295 300
54

55 <210> SEQ ID NO 2

56 <211> LENGTH: 7

57 <212> TYPE: PRT

58 <213> ORGANISM: Artificial Sequence

59 <220> FEATURE:

60 <221> NAME/KEY: BINDING

61 <222> LOCATION: 2..4

62 <223> OTHER INFORMATION: Binding motif for binding metal oxides

63 <400> SEQUENCE: 2

W--> 64 His Xaa Xaa Xaa His Arg Ser

65 1 5

66 <210> SEQ ID NO 3

67 <211> LENGTH: 7

68 <212> TYPE: PRT

69 <213> ORGANISM: Artificial Sequence

70 <220> FEATURE:

71 <221> NAME/KEY: BINDING

72 <222> LOCATION: 2..4

73 <223> OTHER INFORMATION: Binding motif for binding metal oxides

74 <400> SEQUENCE: 3

W--> 75 Arg Xaa Xaa Xaa His Arg Ser

76 1 5

77 <210> SEQ ID NO 4

78 <211> LENGTH: 7

79 <212> TYPE: PRT

80 <213> ORGANISM: Artificial Sequence

81 <220> FEATURE:

82 <221> NAME/KEY: BINDING

83 <222> LOCATION: 3..4

84 <223> OTHER INFORMATION: Binding motif for binding metal oxides

85 <400> SEQUENCE: 4

W--> 86 Ser Lys Xaa Xaa His Arg Ser

87 1 5

88 <210> SEQ ID NO 5

89 <211> LENGTH: 7

90 <212> TYPE: PRT

91 <213> ORGANISM: Artificial Sequence

92 <220> FEATURE:

93 <221> NAME/KEY: BINDING

94 <222> LOCATION: 3..4

see item 12 on Error Summary sheet

see item 10 on Error Summary sheet

item 12

item 10

item 12

item 10

item 12

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RAW SEQUENCE LISTING
PATENT APPLICATION US/09/301,704A

DATE: 08/26/1999
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95 <223> OTHER INFORMATION: Binding motif for binding metal oxides
 96 <400> SEQUENCE: 5
 W--> 97 Ser Arg Xaa Xaa His Arg Ser
 98 1 5
 99 <210> SEQ ID NO 6 *den 10*
 100 <211> LENGTH: 7
 101 <212> TYPE: PRT
 102 <213> ORGANISM: Artificial Sequence *den 12*
 103 <220> FEATURE:
 104 <221> NAME/KEY: BINDING
 105 <222> LOCATION: 3..4
 106 <223> OTHER INFORMATION: Binding motif for binding metal oxides
 107 <400> SEQUENCE: 6 *den 10*
 W--> 108 Thr Lys Xaa Xaa His Arg Ser
 109 1 5
 110 <210> SEQ ID NO 7
 111 <211> LENGTH: 7
 112 <212> TYPE: PRT
 113 <213> ORGANISM: Artificial Sequence *den 12*
 114 <220> FEATURE:
 115 <221> NAME/KEY: BINDING
 116 <222> LOCATION: 3..4
 117 <223> OTHER INFORMATION: Binding motif for binding metal oxides
 118 <400> SEQUENCE: 7 *den 10*
 W--> 119 Thr Arg Xaa Xaa His Arg Ser
 120 1 5
 121 <210> SEQ ID NO 8
 122 <211> LENGTH: 24
 123 <212> TYPE: DNA
 124 <213> ORGANISM: Artificial Sequence
 125 <220> FEATURE:
 126 <223> OTHER INFORMATION: Oligonucleotide for the construction of a
 127 double-stranded poly histidine segment (Example 1)
 128 <400> SEQUENCE: 8 24
 129 gatctcatca ccatcatcac catg
 130 <210> SEQ ID NO 9
 131 <211> LENGTH: 24
 132 <212> TYPE: DNA
 133 <213> ORGANISM: Artificial Sequence
 134 <220> FEATURE:
 135 <223> OTHER INFORMATION: Oligonucleotide for the construction of a
 136 double-stranded poly histidine segment (Example 1)
 137 <400> SEQUENCE: 9 24
 138 gatccatggt gatgatggtg atga
 139 <210> SEQ ID NO 10
 140 <211> LENGTH: 54
 141 <212> TYPE: DNA
 142 <213> ORGANISM: Artificial Sequence
 143 <220> FEATURE:
 144 <221> NAME/KEY: unsure

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RAW SEQUENCE LISTING
PATENT APPLICATION US/09/301,704A

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Input Set: I301704A.RAW

145 <222> LOCATION: 13..39
146 <223> OTHER INFORMATION: v indicates equal molar amounts of A, C, and G; and
147 n indicates equal molar amounts of A, C, T, G in
148 template oligonucleotide
149 <400> SEQUENCE: 10
150 ggacgcagat ctynnvnvn nnvnvnvn vnnvnvnna gatctagcac cagt 54
151 <210> SEQ ID NO 11
152 <211> LENGTH: 15
153 <212> TYPE: DNA
154 <213> ORGANISM: Artificial Sequence
155 <220> FEATURE:
156 <223> OTHER INFORMATION: Primer oligonucleotide
157 <400> SEQUENCE: 11 15
158 actggtgcta gatct
159 <210> SEQ ID NO 12
160 <211> LENGTH: 13
161 <212> TYPE: PRT
162 <213> ORGANISM: Artificial Sequence
163 <220> FEATURE:
164 <223> OTHER INFORMATION: Sequence conferring the ability of cells to adhere
165 to metal oxides
166 <400> SEQUENCE: 12
167 Arg Ser Val Val Arg Pro Lys Ala Ala Thr Asn Arg Ser
168 1 5 10
169 <210> SEQ ID NO 13
170 <211> LENGTH: 13
171 <212> TYPE: PRT
172 <213> ORGANISM: Artificial Sequence
173 <220> FEATURE:
174 <223> OTHER INFORMATION: Sequence conferring the ability of cells to adhere
175 to metal oxides
176 <400> SEQUENCE: 13
177 Arg Ser Arg Ile Arg His Arg Leu Val Gly Gln Arg Ser
178 1 5 10
179 <210> SEQ ID NO 14
180 <211> LENGTH: 24
181 <212> TYPE: PRT
182 <213> ORGANISM: Artificial Sequence
183 <220> FEATURE:
184 <223> OTHER INFORMATION: Sequence conferring the ability of cells to adhere
185 to metal oxides
186 <400> SEQUENCE: 14
187 Arg Ser Val Lys Asp Gly Ser Ala Thr Ala Lys Arg Ser Val Ala Asn
188 1 5 10 15
189 Phe Glu Thr Pro Arg Val Arg Ser
190 20
191 <210> SEQ ID NO 15
192 <211> LENGTH: 24
193 <212> TYPE: PRT
194 <213> ORGANISM: Artificial Sequence

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RAW SEQUENCE LISTING
PATENT APPLICATION US/09/301,704A

DATE: 08/26/1999
TIME: 11:01:29

Input Set: I301704A.RAW

```

195 <220> FEATURE:
196 <223> OTHER INFORMATION: Sequence conferring the ability of cells to adhere
197 to metal oxides
198 <400> SEQUENCE: 15
199 Arg Ser Ala Pro Gln Thr Gly Arg Pro Asn Asn Arg Ser Leu Pro Leu
200 1 5 10 15
201 Gly Asn Arg Asp Met Gln Arg Ser
202 20
203 <210> SEQ ID NO 16
204 <211> LENGTH: 13
205 <212> TYPE: PRT
206 <213> ORGANISM: Artificial Sequence
207 <220> FEATURE:
208 <223> OTHER INFORMATION: Sequence conferring the ability of cells to adhere
209 to metal oxides
210 <400> SEQUENCE: 16
211 Arg Ser Val Gln Asn Asp Arg Ile Val Ala Gly Arg Ser
212 1 5 10
213 <210> SEQ ID NO 17
214 <211> LENGTH: 13
215 <212> TYPE: PRT
216 <213> ORGANISM: Artificial Sequence
217 <220> FEATURE:
218 <223> OTHER INFORMATION: Sequence conferring the ability of cells to adhere
219 to metal oxides
220 <400> SEQUENCE: 17
221 Arg Ser Tyr Pro Pro Phe His Asn Asn Asp His Arg Ser
222 1 5 10
223 <210> SEQ ID NO 18
224 <211> LENGTH: 24
225 <212> TYPE: PRT
226 <213> ORGANISM: Artificial Sequence
227 <220> FEATURE:
228 <223> OTHER INFORMATION: Sequence conferring the ability of cells to adhere
229 to metal oxides
230 <400> SEQUENCE: 18
231 Arg Ser Asn Thr Arg Met Thr Ala Arg Gln His Arg Ser Ala Asn His
232 1 5 10 15
233 Lys Ser Thr Gln Arg Ala Arg Ser
234 20
235 <210> SEQ ID NO 19
236 <211> LENGTH: 24
237 <212> TYPE: PRT
238 <213> ORGANISM: Artificial Sequence
239 <220> FEATURE:
240 <223> OTHER INFORMATION: Sequence conferring the ability of cells to adhere
241 to metal oxides
242 <400> SEQUENCE: 19
243 Arg Ser Leu Ala Ile Asp Gly Thr Asp Val Gln Arg Ser Lys Pro Leu
244 1 5 10 15

```

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

✓ FYI

VERIFICATION SUMMARY
PATENT APPLICATION US/09/301,704ADATE: 08/26/1999
TIME: 11:01:29

Input Set: I301704A.RAW

Line	? Error/Warning	Original Text
64	W "N" or "Xaa" used: Feature required	His Xaa Xaa Xaa His Arg Ser
75	W "N" or "Xaa" used: Feature required	Arg Xaa Xaa Xaa His Arg Ser
86	W "N" or "Xaa" used: Feature required	Ser Lys Xaa Xaa His Arg Ser
97	W "N" or "Xaa" used: Feature required	Ser Arg Xaa Xaa His Arg Ser
108	W "N" or "Xaa" used: Feature required	Thr Lys Xaa Xaa His Arg Ser
119	W "N" or "Xaa" used: Feature required	Thr Arg Xaa Xaa His Arg Ser
150	W "N" or "Xaa" used: Feature required	ggacgcagat ctvnnvnvnn nvnnvnvnn vnnvnvnn
416	W "N" or "Xaa" used: Feature required	Ser Lys Xaa Xaa Ala Arg
427	W "N" or "Xaa" used: Feature required	Ser Arg Xaa Xaa Ala Arg
438	W "N" or "Xaa" used: Feature required	Thr Lys Xaa Xaa Ala Arg
449	W "N" or "Xaa" used: Feature required	Thr Arg Xaa Xaa Ala Arg
460	W "N" or "Xaa" used: Feature required	Arg Xaa Xaa Xaa His Arg Ser